

**REMARKS**

Applicants wish to thank the Examiner for considering the present application. Claims 1-5 are pending in the application. Applicants respectfully request the Examiner to reconsider the rejections.

**REJECTION UNDER 35 U.S.C. § 101**

Claims 1-5 stand rejected under 35 U.S.C. §101 because the claims are directed toward non-statutory subject matter.

The Examiner states that the claim language does not transform underlying subject matter (such as article or materials) to a different state or thing. The claim recited mental steps. To qualify as a §101 statutory process, the claim should positively recite the statutory class (the thing or product) to which it is tied. Thus, claims 1-5 have been rejected as non-statutory. Claim 1 has been amended to recite that the area-wide broadcast downlink beams are operated for the satellite for supporting point-to-point transmissions of one or more of the multiple spot beams of the satellite whose transmission capacity has been exhausted. Applicants respectfully submit that this change more positively recites the operation of the satellite using one type of beam versus another type of beam. Applicants, therefore, respectfully request the Examiner to reconsider this rejection since the claim falls within statutory subject matter. Should the Examiner have any further suggestions, the Examiner is respectfully requested to call the undersigned with such suggestions.

**REJECTION UNDER 35 U.S.C. § 103**

Claims 1-5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rosen (U.S. Pat. No. 4,831,619) in view of Sherman et al. (U.S. Pat. No. 6,005,855). This rejection is respectfully traversed.

Claim 1 has been amended to recite integrating an area-wide broadcast downlink beam to be used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted. The Examiner points to *Rosen*, col. 4, ll. 30-41, Fig. 9, zones 31, 33, 35 and 37 as well as col. 2, ll. 19-40. Applicants admit that point-to-point and broadcast service is provided in the *Rosen* reference as described in col. 4.

On page 3 of the Office Action, the Examiner states that *Rosen* does not explicitly show that the downlink beam is used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted. Applicants have reviewed the *Sherman* reference and can find no teaching or suggestion of a downlink beam used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted.

The Examiner points to column 16, lines 14-32 of the *Sherman* reference for teaching a downlink beam that is used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted. After reviewing these lines and column 16, lines 3-13, Applicants respectfully submit that the *Sherman* reference does not teach a satellite that includes an area-wide beam and point-to-point transmissions. Figure 6 of the *Sherman* reference illustrates a fixed-grid tiling of satellite-cellular traffic nodes for 13 frequencies available in a satellite beam. The hexagon illustrated in Fig. 16 corresponds to the satellite beam. Each tile represents a node that is assigned a channel frequency and a given

number of user-terminal links. As illustrated in Fig. 7, tiles labeled 2, 12 and 13 are made smaller because they have fewer users and therefore require less power. Cells 1, 3, 4 and 5 are made larger because those frequencies can carry more power without increasing self interference. Thus, the Sherman reference teaches resizing different portions of a satellite beam to prevent or minimize interference caused by frequency re-use. There is no teaching or suggestion for an area-wide broadcast downlink beam of a satellite to be used to support point-to-point transmissions of one or more of the multiple spot beams of the satellite whose transmission capacity has been exhausted.

Further, Applicants respectfully submit that the combination of the Rosen and Sherman references is improper. For example, the Examiner alleges that “It would have been obvious to one of ordinary skill in the art at the time the invention was made to use, downlink-beam to be used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted, as taught by Sherman, in order for reducing the number of possible overflow channels, the design of the receiver may be simplified. Applicants respectfully submit that the present claims are directed to a satellite system and therefore referring to a simplified receiver design does not make sense.

This brief explanation falls far short of the type of **explicit analysis** that is required by the Supreme Court in KSR Int’l v. Teleflex Inc., 127 S.Ct. 1727 (2007). Absent such an express teaching or suggestion in the references, the explicit analysis and reasoning must be supplied by the Examiner. *Id.* In other words, the Examiner is required to provide explicit reasoning as to why one skilled in the art would be motivated to construct a system that uses an area-wide broadcast downlink beam to be used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted. Neither reference

teaches exhausting of a multiple spot beam and supplementing the spot-beam capacity with an area wide-broadcast downlink beam. The Examiner's reasoning is unclear as to the motivation. Here, the Examiner merely notes that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide multiple spot beams whose transmission capacity has been exhausted and fails to provide explicit analysis and reasoning as required. The Examiner's reasoning merely addresses the Sherman reference's reallocation of the size of the parts within a spot beam without regard to the type of beams. More specifically, the Examiner's reasoning fails to address the use of wide-area beams used when spot-beam capacity has been exhausted.

Therefore, the combination of the Sherman and Rosen references do not teach or suggest that an area-wide downlink beam is used to support the point-to-point transmissions of one or more multiple spot beams whose transmission capacity has been exhausted. Therefore, Applicants respectfully request the Examiner to reconsider the rejection of claim 1.

Claims 2-5 depend upon allowable independent claim 1 and are also allowable for at least the reasons set forth above.

**CONCLUSION**

In light of the remarks above, Applicants submit that all rejections are now overcome. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, the Examiner is respectfully requested to contact the undersigned attorney.

Should any fees be associated with this submission, please charge Deposit Account 50-0383.

Respectfully submitted,

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